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(54) **PIGMENT MAGNETIQUE**  
(54) **MAGNETIC PIGMENT**

(57) Les particules magnétiques décrites ont une surface extérieure en verre sensiblement dépourvue de pores ou pourvue de pores d'un diamètre inférieur à 10 nm. Ces particules ferromagnétiques à surface en verre sont utilisables de préférence pour isoler des matériaux biologiques contenus dans des échantillons. Elles assurent une purification rapide et fiable.

(57) Magnetic particles have a substantially pore-free outer glass surface, or an outer glass surface with pores having less than 10 nm diameter. Ferromagnetic particles with a glass surface are preferably used to isolate biological materials from samples. They ensure a rapid and reliable purification.

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**Abstract of the disclosur**

Magnetic particles with an outer glass surface being essentially poreless or having pores of a diameter of less then 10 nm as well as ferromagnetic particles with a glass surface are preferentially useful for the isolation of biological material from samples. They provide a quick and reliable purification.

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## Claims

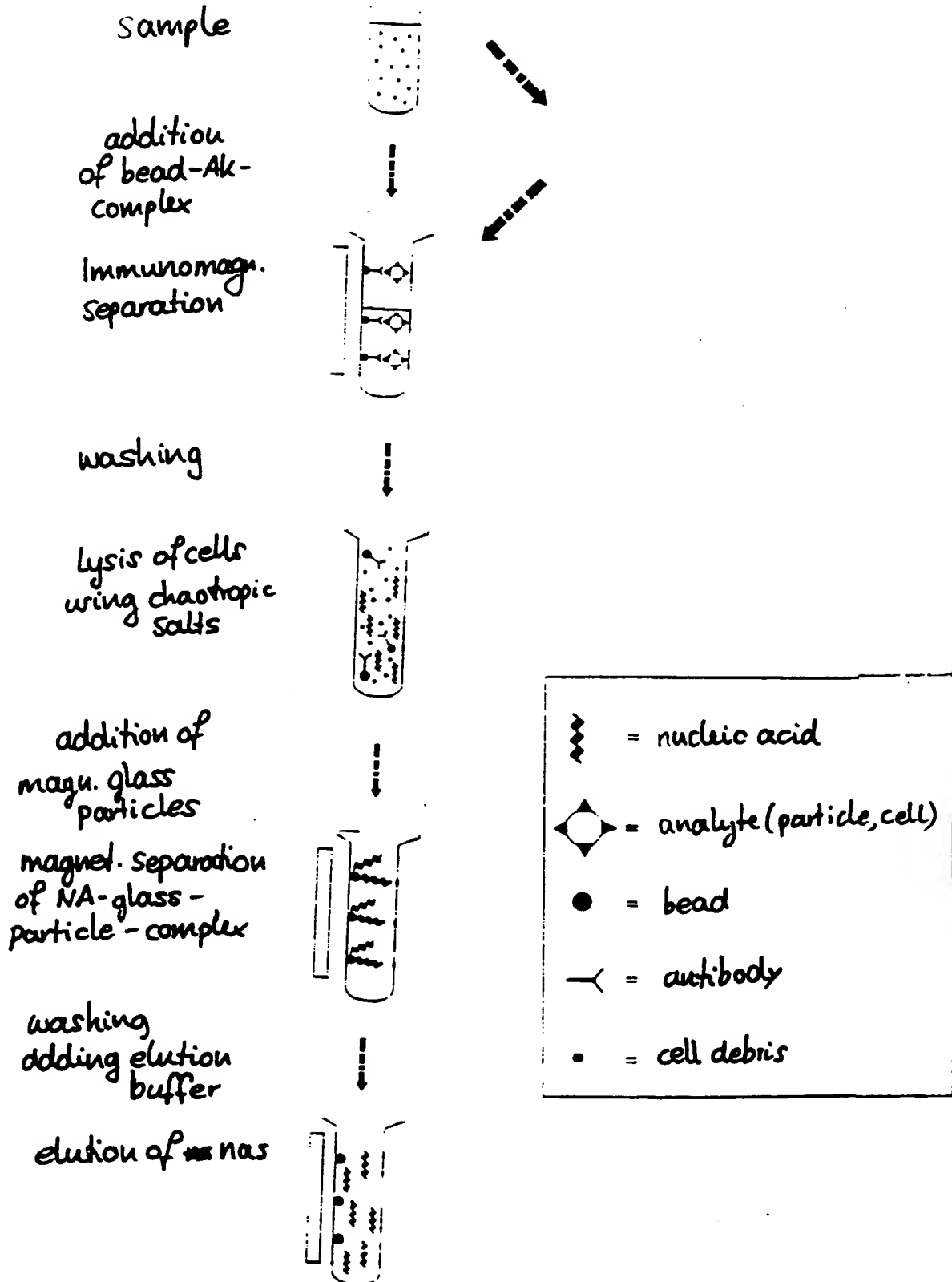
1. Magnetic particles with an outer surface made of glass that contains boroxide.
2. Particles according to claim 1, characterized in that the glass surface is substantially pore-free or has pores with a diameter of less than 10 nm.
3. Particles according to claim 1 or 2, characterized in that they have a particle size of between 10 and 60  $\mu\text{m}$ .
4. Particles according to claim 1 or 2, characterized in that any pores contained in the surface have a diameter of less than 1 nm.
5. Particles according to claim 1 or 2, characterized in that the particles contain a composite material with a mica core and magnetite particles immobilized on it, the composite material being embedded in a glass layer.
6. Procedure for isolating a biological material comprising
  - Bringing a sample that contains the biological material in a fluid in contact with particles according to one of the claims 1 through 15 under conditions in which the biological material binds directly to the glass surface, and
  - Separating the biological material from the fluid.

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- Bringing a sample that contains the nucleic acids in native form in a fluid in contact with magnetic particles having glass surfaces that are substantially pore-free or that have pores with a diameter of less than 10 nm under conditions in which the nucleic acids in their native form can bind directly to the glass surface, and
  - Separating the bound nucleic acids from the fluid.
10. Procedure based on claim 9, characterized in that the magnetic particles are not premagnetized when brought in contact with the sample.
11. Procedure for manufacturing magnetic glass particles with a particle size of between 10 and 60  $\mu\text{m}$  by
- Providing a magnetic core and
  - Enclosing the magnetic core in a substantially pore-free glass surface by
  - Depositing a sol formed of an alcohol solution containing alkoxides of network-forming components on the surface,
  - Transforming the sol layer into a gel layer by means of a spray drying procedure, and then
  - Densifying the gel.

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FIG 1



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1  $\mu$ g  $\lambda$  DNA V38/2 V38/3 V38/4

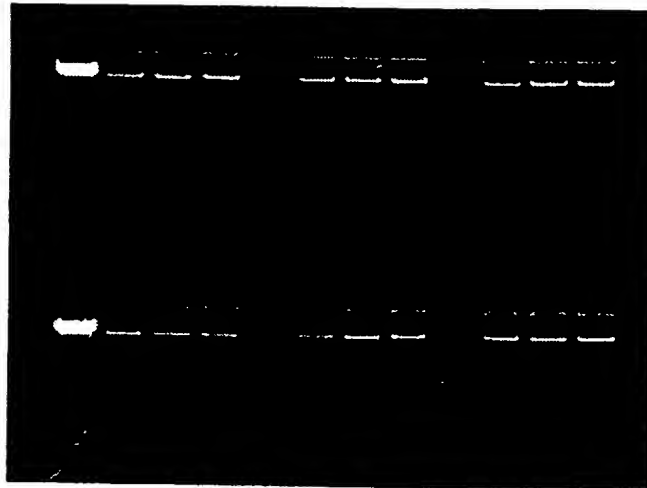
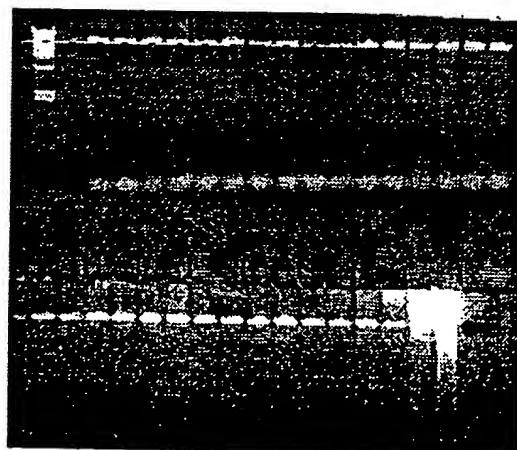


FIG 2

MWM III V38/2 | 38/3 | V38/4

2 3 1 2 3 1 2 3



15 kb

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1 2 1 2 3 1 2 K

V38/2 | V38/3 | V38/4

FIG 3

3/3

FIG 4

